Kerberos V, OpenLDAP, OpenAFS

Using Debian GNU/Linux

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Overview

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- short site report

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- next steps

Site Report

current cell vn.uniroma3.it for $\geq$ 10 years

alternative cell dia.uniroma3.it for $\approx$ 2 years

servers Dell PowerEdge SCSI HW RAID5

clients (AIX), Linux, MacOS X, (Windows XP)

volumes many backups, few replicas, some copies

backups to file on hard disk

users students, lecturer, staff

conventional use homes, mail, web

advanced use computer based exams, lab software

useful new commands found in OpenAFS

Context

department
: part of Engineering from our university

hardware
: 32bit Intel off-the-shelf

software
: mainly open source, Windows Campus licence

Linux distributions
: Debian, Gentoo, Ubuntu

advancing technologies
: parallel, distributed, grid computing;
new Windows 2000 server architecture

Motivation for alternative Cell

1. cell vn.uniroma3.it with external support
2. customized RedHat Linux
3. started with Transarc and now OpenAFS
4. on “AS IS” blackbox basis
5. born during the period of many UNIX dialects
6. no direct access to AFS administrative commands
7. kaserver (now fakeka) + NIS based
8. local mail spool but UW-imap folders in AFS
9. some ACLs with IPs but no keytabs

Core Architecture Shift

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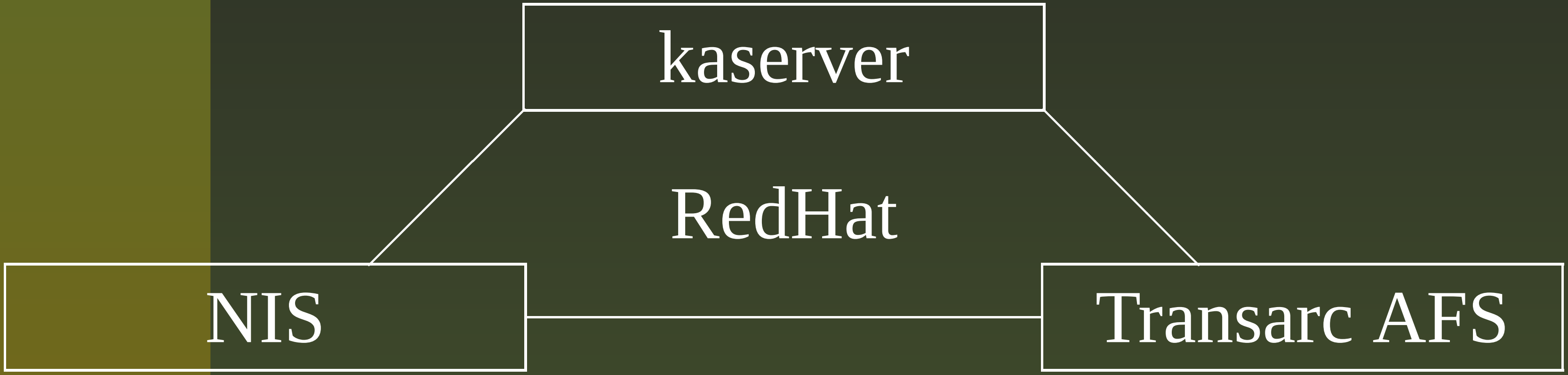

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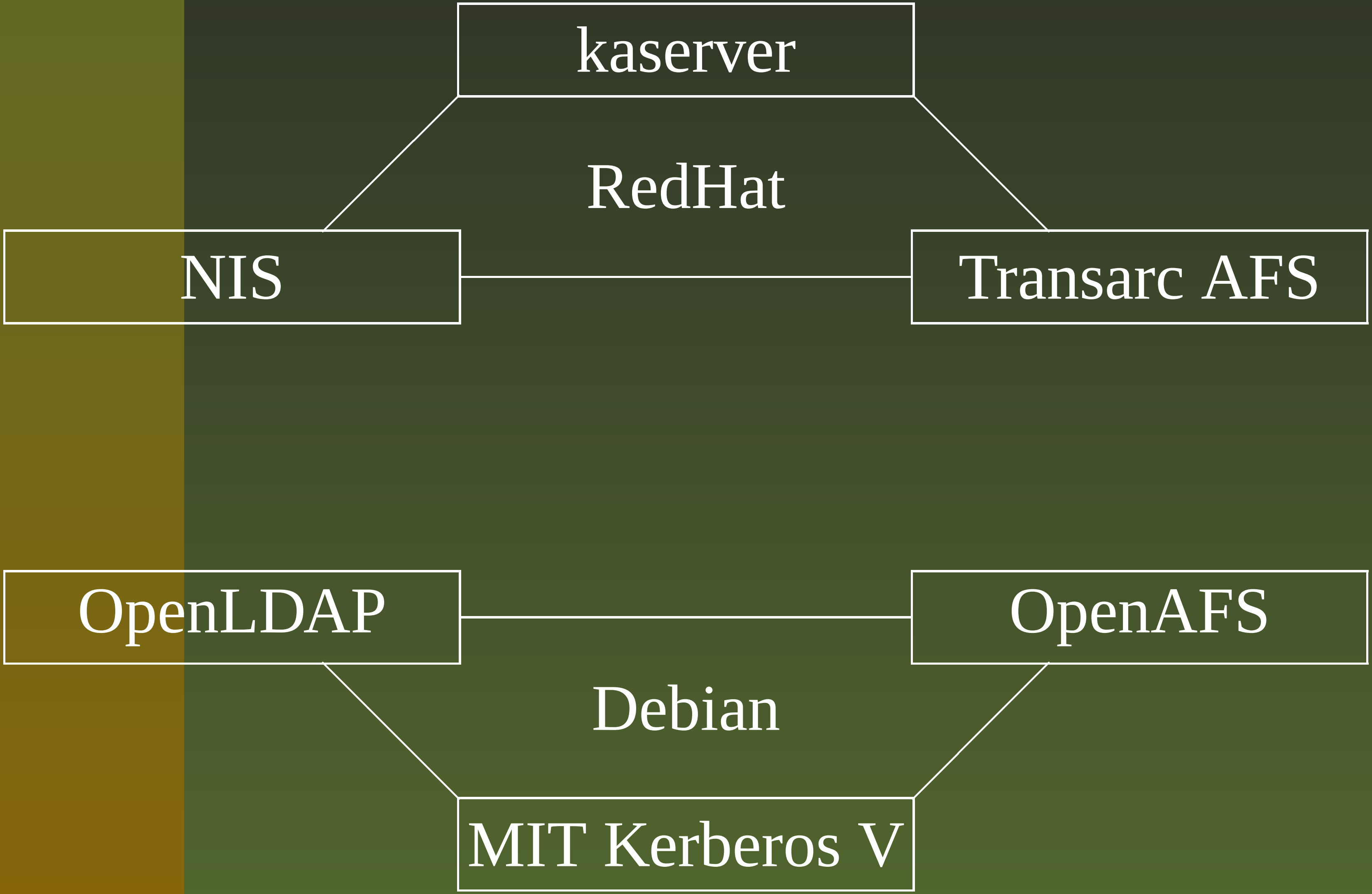

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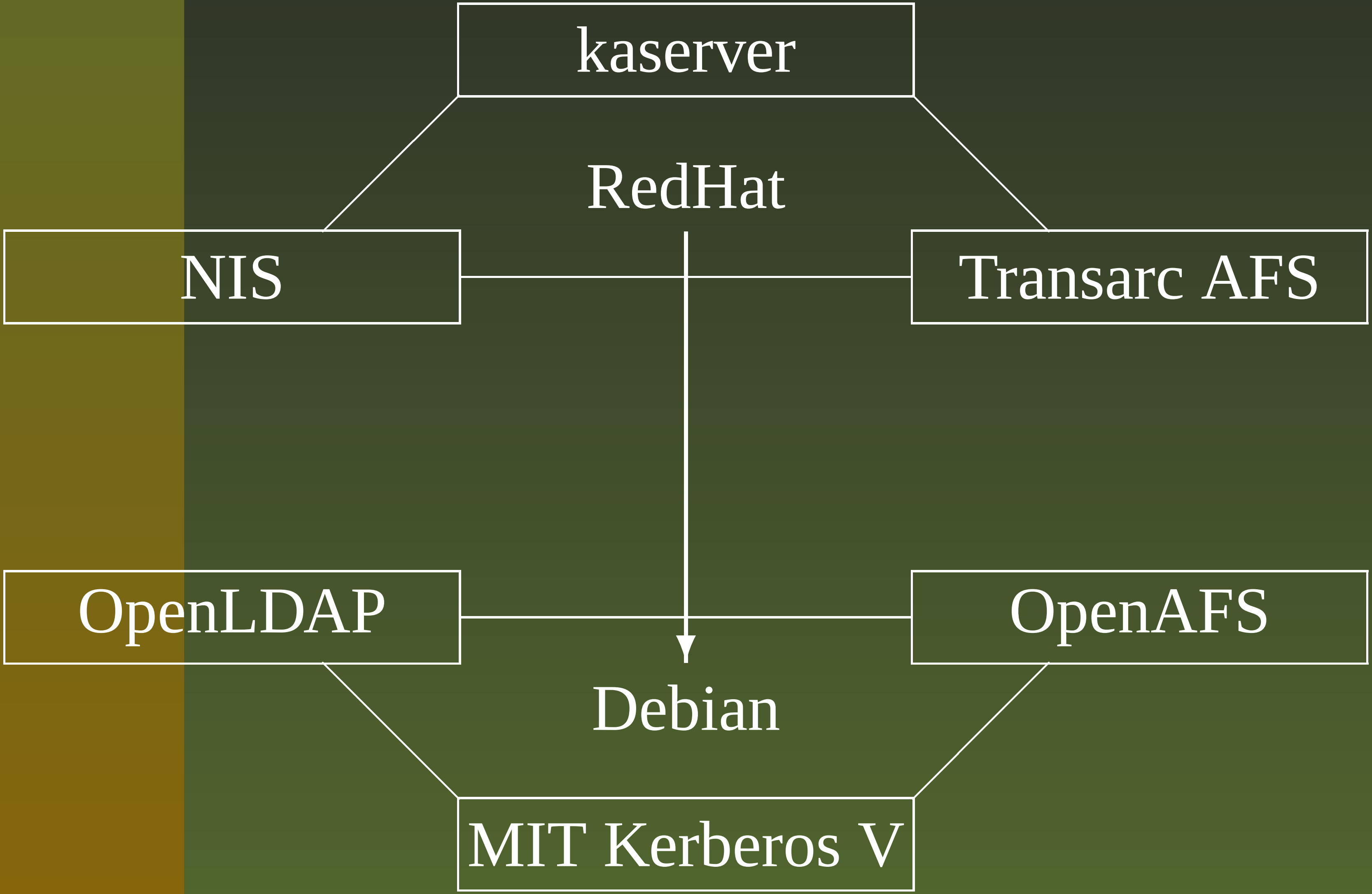

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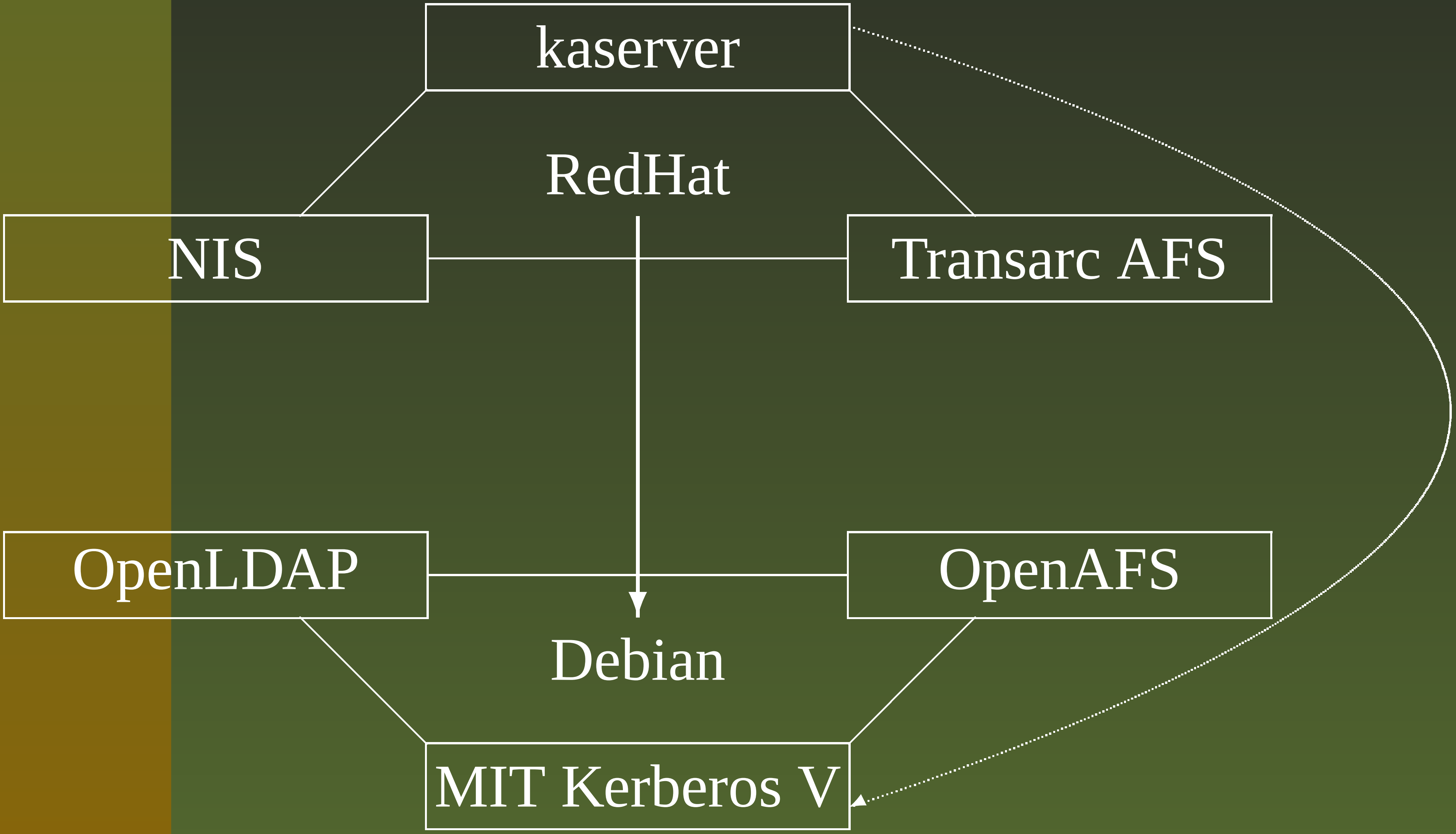
kaserver

RedHat

NIS

Transarc AFS

OpenLDAP

OpenAFS

Debian

MIT Kerberos V

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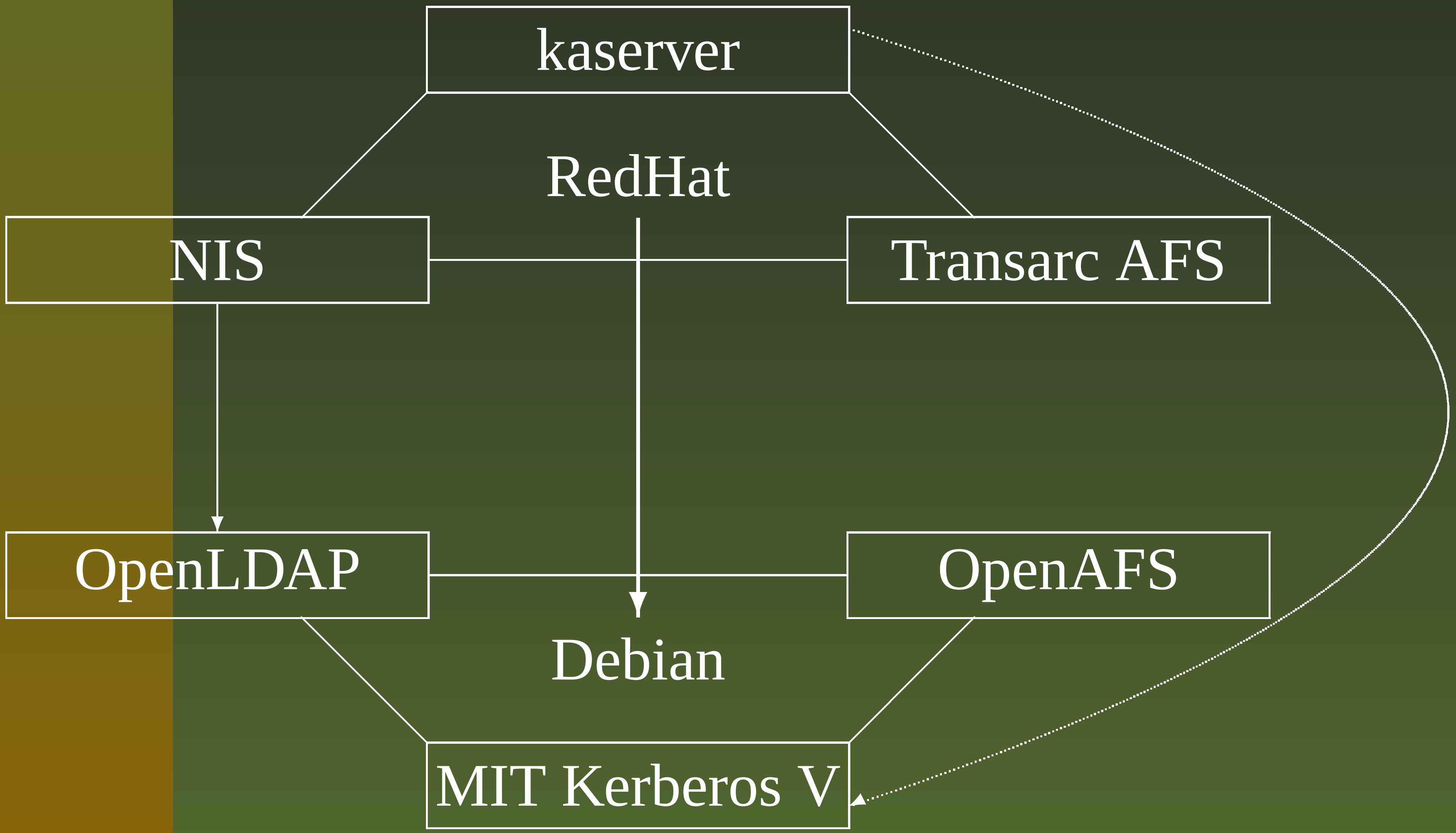

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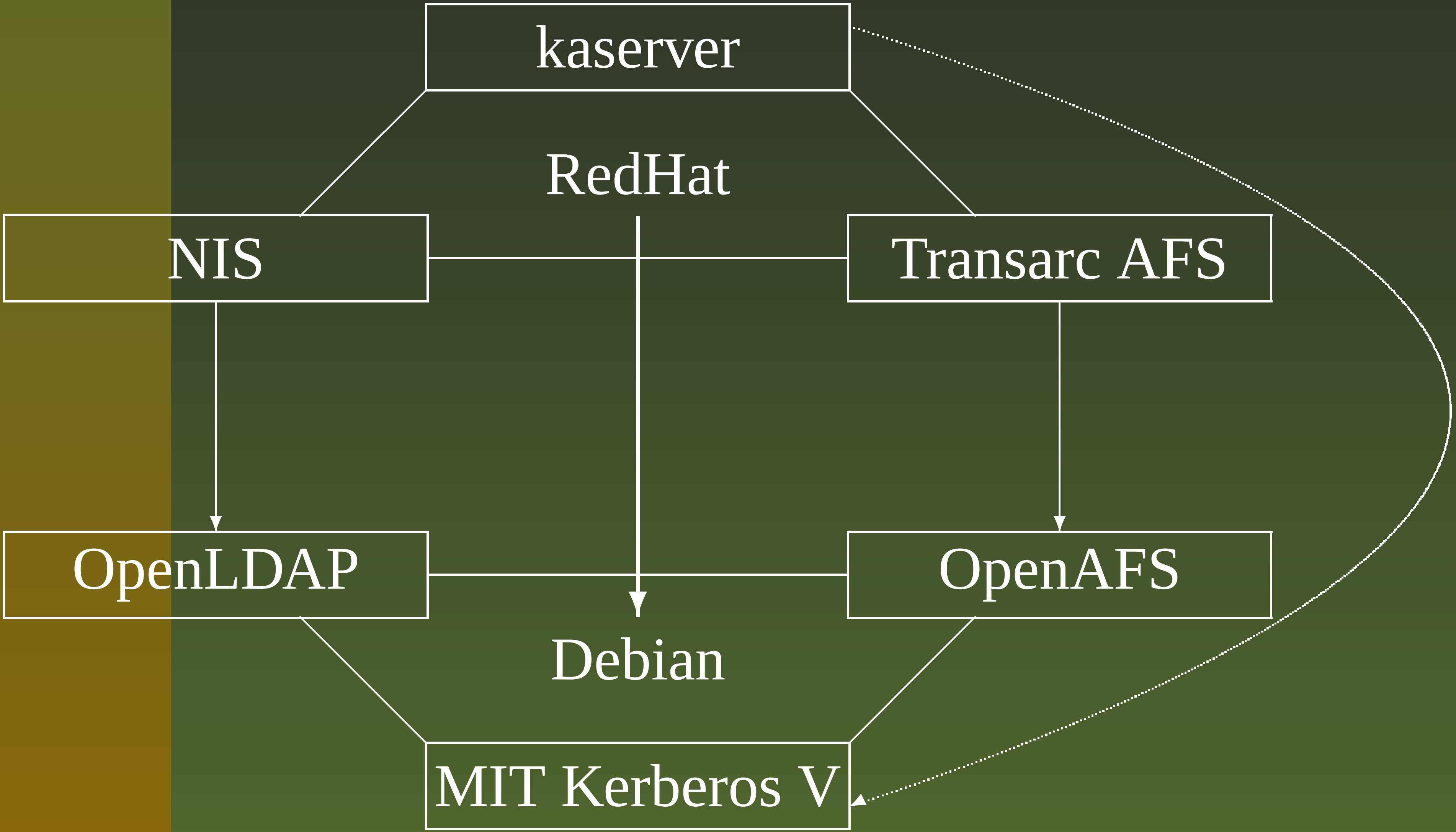

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OpenAFS: distributed filesystem

- redundancy
- allows for mail and web integration
- low-cost NAS/SAN substitution over Ethernet

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	keytab	PAM	PAM
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oAFS	mod_dav	procmail	MAILDIR
	DAV access	MAILDIR	access

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KRB5	GSSAPI + PAM	RADIUS + PAM	keytab
LDAP	NSS		
oAFS	HOME	(spool)	(backup)

Redundancy

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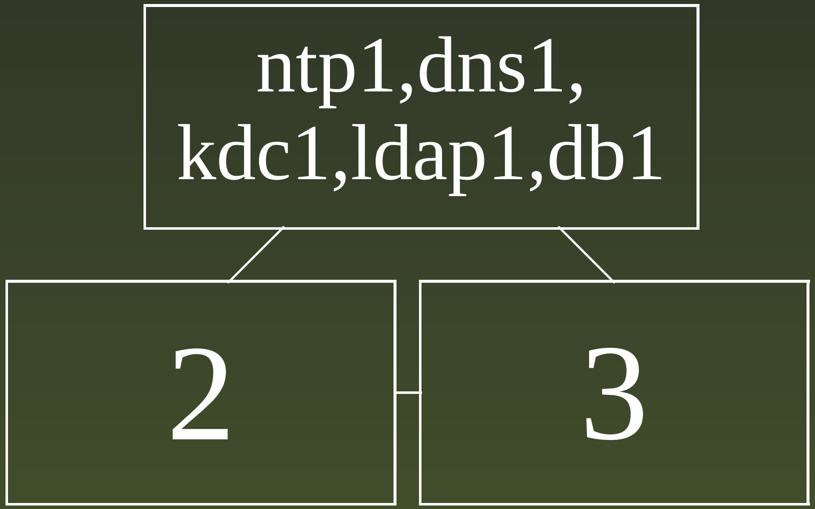

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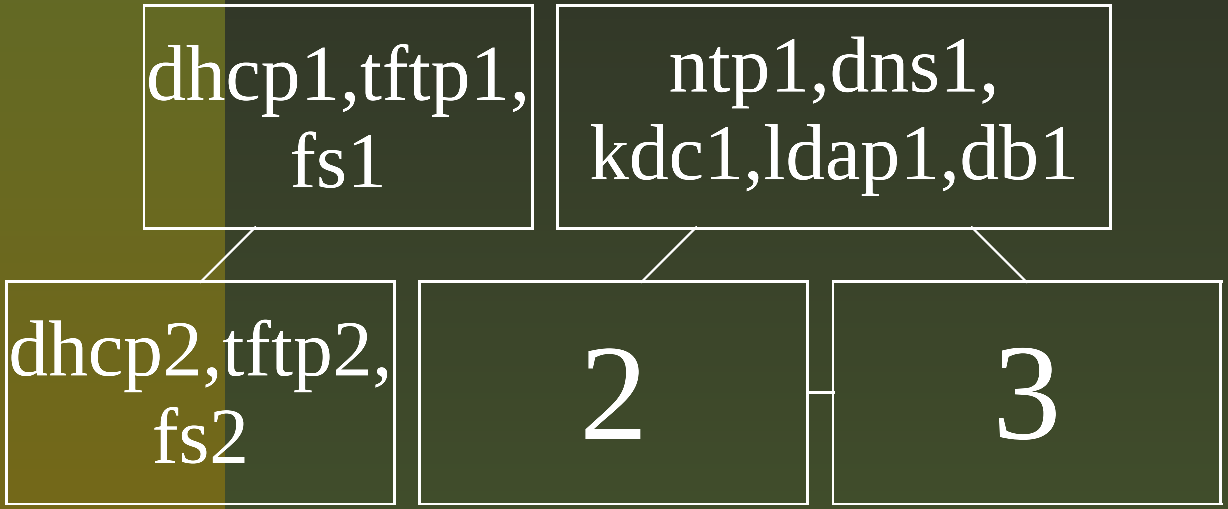
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ntp1,dns1, kdc1,ldap1,db1

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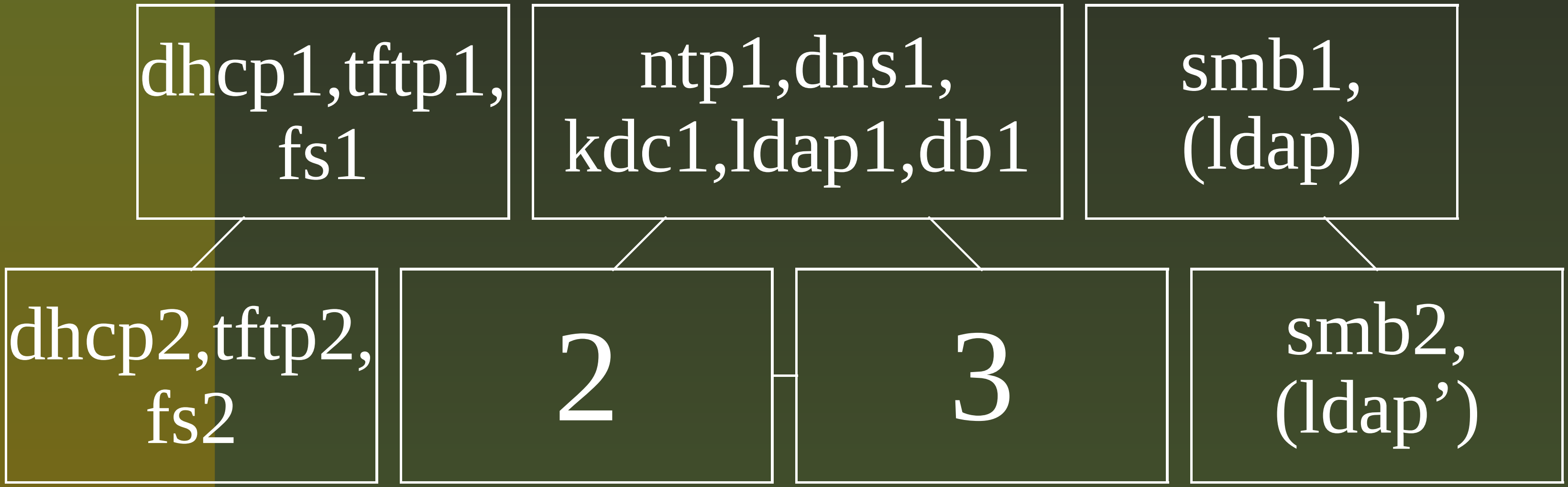

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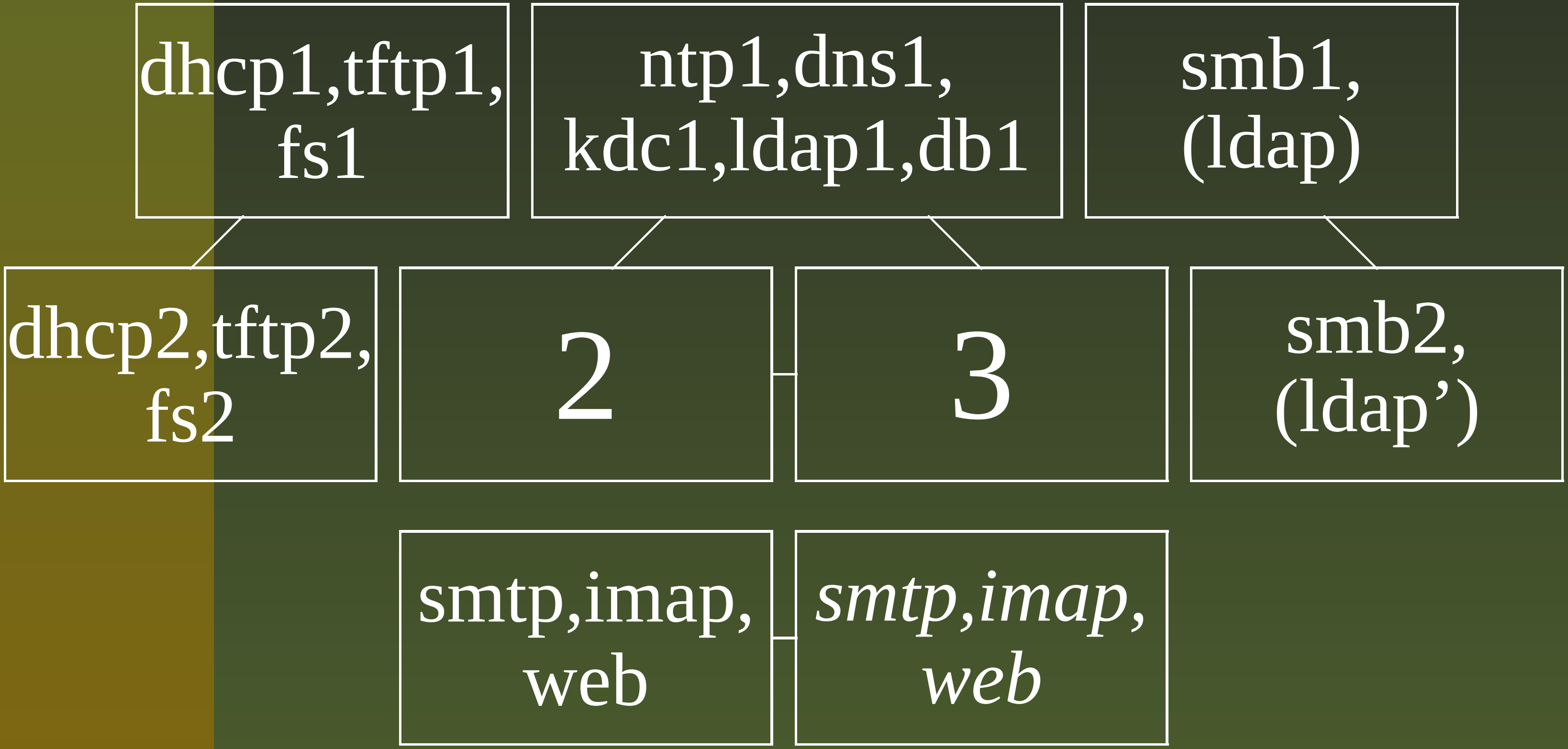

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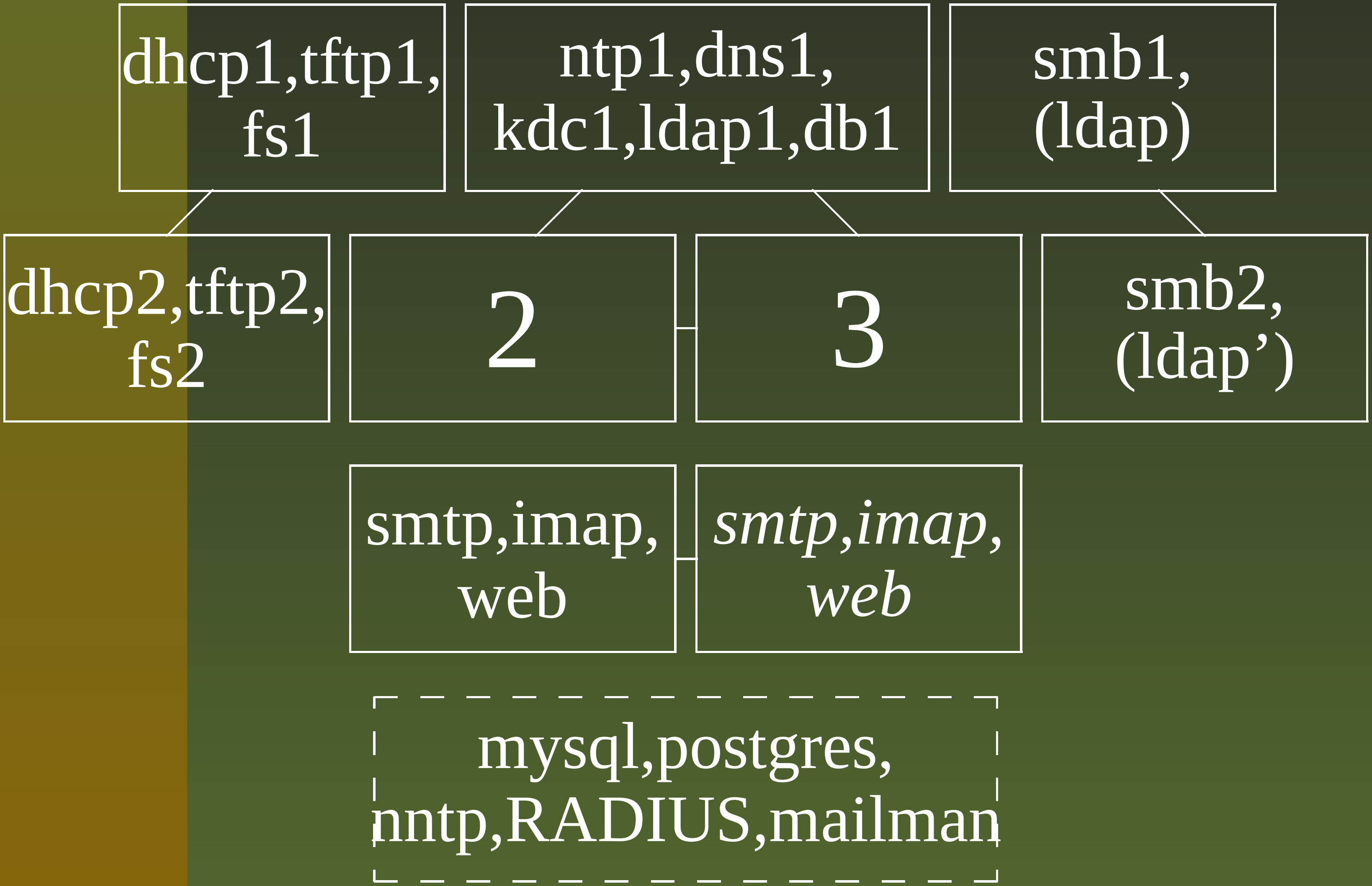

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3. home volume replacement
   - for specialized exams
   - prepare fresh empty volume
   - set real home volume offline during exam

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- possibilities:

  - certificate based mail relay
  - certificate based web access
  - mail signing and encryption

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